the forearm link has a proximal end, a distal end and a forearm axis extending longitudinally from the proximal end of the forearm link to the distal end of the forearm link;

the wrist link has a proximal end and a distal end and a wrist axis extending from the proximal end of the wrist link **[forearm]** to the distal end of the wrist link **[forearm]**;

the proximal end of the forearm link is connected to the control section, the distal end of the forearm link is connected to a pivotal wrist joint; and

the proximal end of the wrist link is connected to the pivotal wrist joint and the distal end of the wrist link is connected to the end effector;

and the control section comprises a plurality of control motors and linkages **[adapted]** to operate the insertion section with at least five degrees of freedom including:

insertion and retraction of the forearm link along the forearm axis and through the small incision;

rotation of the forearm link about the forearm axis;

pivotal motion of the forearm link about a first pivotal axis and a second pivotal axis which are perpendicular to each other and intersect the forearm axis at a pivot point between the proximal end of the forearm link and the distal end of the forearm link adjacent the small incision, wherein such pivotal motion of the forearm link avoids lateral movement of the forearm link at the pivot point; and

pivotal motion of the wrist link relative to the forearm link.

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2. ~~27.~~ (Amended) The endoscopic surgical instrument as described in claim ~~26~~ 1 wherein the wrist link comprises an inner link and an outer link and wherein the control section operates **[is adapted to operate]** the insertion section with at least six degrees of freedom including movement of the outer link of the wrist link relative to the inner link of the wrist link.

3. ~~28.~~ (Amended) The endoscopic surgical instrument as described in claim ~~27~~ 2 wherein the outer link of the wrist link

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and the inner link of the wrist link are axially aligned and wherein the control section rotates **[is adapted to rotate]** the outer link relative to the inner link.

4. ~~29.~~ (Amended) The endoscopic surgical instrument as described in claim ~~26~~ 1 wherein the end effector comprises a first element and a second element and wherein the control section moves **[is further adapted to move]** the first element relative to the second element.

5. ~~30.~~ (Amended) The endoscopic surgical instrument as described in claim ~~27~~ 2 wherein the end effector comprises a first element and a second element and wherein the control section moves **[is further adapted to move]** the first element relative to the second element.

6. ~~31.~~ (Amended) The endoscopic surgical instrument as described in claim ~~26~~ 1 wherein the end effector comprises a surgical instrument head selected from the group of retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades and irrigators.

7. ~~32.~~ (Amended) The endoscopic surgical instrument as described in claim ~~26~~ 1 wherein the control section is **[adapted to be]** fixed to a support rail of a surgical table for support of a ~~the~~ surgical manipulator during surgery.

8. ~~33.~~ (Amended) A surgical method for endoscopic surgery comprising the steps of:

providing an endoscopic surgical instrument comprising a control section and an insertion section; **[wherein:]**

inserting the insertion section **[is adapted to be inserted]** into a patient through a small incision to a location adjacent a worksite inside the patient, wherein **[;]**the insertion section comprises a rigid forearm link, a wrist link and an end effector, and wherein:

the forearm link has a proximal end, a distal end and a forearm axis extending longitudinally from the proximal end of the forearm link to the distal end of the forearm link;

the wrist link has a proximal end and a distal end and a wrist axis extending from the proximal end of the wrist link **[forearm]** to the distal end of the wrist link **[forearm]**;

the proximal end of the forearm link is connected to the control section, the distal end of the forearm link is connected to a pivotal wrist joint; **[and]**

the proximal end of the wrist link is connected to the pivotal wrist joint and the distal end of the wrist joint is connected to the end effector; and **[inserting]** the forearm link is inserted distally along the forearm axis through the small incision;

operating a servomechanism to rotate the forearm link about the forearm axis;

operating the **[a]** servomechanism to pivot the forearm link about a first pivotal axis and a second pivotal axis which are perpendicular to each other and intersect the forearm axis at a pivot point, the pivot point disposed between the proximal end of the forearm link and the distal end of the forearm link and adjacent the small incision, wherein such pivotal operation of the forearm link avoids lateral movement of the forearm link at the pivot point;

operating the **[a]** servomechanism to pivot the wrist link relative to the forearm; and

manipulating human tissue with the end effector at the worksite inside the patient**[;**

and operating a servomechanism to retract the forearm link along the forearm axis through the small incision].

9. 8

~~34.~~ (Amended) The method as described in claim ~~33~~

wherein:

the endoscopic surgical instrument providing step **[of providing a surgical manipulator]** comprises providing a surgical manipulator with a wrist link which comprises an inner link and an outer link; and

the method comprises the additional step of operating the **[a]** servomechanism to move the outer link of the wrist link relative to the inner link of the wrist link.

10. ~~35.~~ (Amended) The method as described in claim 9 ~~34~~ wherein:

the surgical manipulator providing step **[of providing a surgical manipulator]** comprises axially aligning **[providing a surgical manipulator wherein]** the outer link of the wrist link and the inner link of the wrist link **[are axially aligned]**; and

the step of moving the outer link of the wrist link relative to the inner link of the wrist link comprises the step of operating the **[a]** servomechanism to rotate the outer link relative to the inner link.

11. ~~36.~~ (Amended) The method as described in claim 8 ~~33~~ wherein:

the **[step of providing a surgical manipulator comprises providing a surgical manipulator wherein the]** end effector comprises a surgical instrument having a first element and a second element; and

the method comprises the additional step of operating the **[a]** servomechanism to move the first element relative to the second element.

12. ~~37.~~ (Amended) The method as described in claim 9 ~~34~~ wherein:

the **[step of providing a surgical manipulator comprises providing a surgical manipulator wherein the]** end effector comprises a surgical instrument having a first element and a second element; and

the method comprises the additional step of operating the **[a]** servomechanism to move the first element relative to the second element.

13. ~~38.~~ (Amended) The surgical method as described in claim 8 ~~33~~ wherein:

the **[step of providing a surgical manipulator comprises providing a surgical manipulator wherein the]** end effector comprises a surgical instrument head selected from the group consisting of retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades and irrigators; and

the step of manipulating human tissue comprises the step of actuating the surgical instrument head.

14. ~~39.~~ (As Filed) The surgical method as described in claim 10 ~~33~~ further comprising the step of mounting the control section on a support rail of a surgical table for support of a ~~the~~ surgical manipulator during surgery.

15. ~~40.~~ (Amended) An endoscopic surgical instrument comprising an insertion section and a control section wherein:

the insertion section is insertable **[adapted to be inserted]** into a patient through a small incision to a location adjacent a worksite in the patient;

the insertion section comprises a rigid forearm link, a wrist link and an end effector wherein:

the forearm link has a proximal end, a distal end and a forearm axis extending longitudinally from the proximal end of the forearm to the distal end of the forearm;

the wrist link has a proximal end and a distal end and a wrist axis extending from the proximal end of the forearm to the distal end of the forearm;

the proximal end of the forearm link is connected to the control section, the distal end of the forearm link is connected to a pivotal wrist joint; and

the proximal end of the wrist link is connected to the pivotal wrist joint and the distal end of the wrist joint is connected to the end effector;

and the control section comprises:

means for inserting and retracting the forearm link along the forearm axis and through the small incision;

means for rotating the forearm link about the forearm axis;

means for pivoting the forearm link about a first pivotal axis and a second pivotal axis which are perpendicular to each other and intersect the forearm axis at a pivot point between the proximal end of the forearm link and the distal end of the forearm link adjacent the small incision, wherein such pivotal means avoids lateral movement of the forearm link at the pivot point; and

means for pivoting the wrist link relative to the forearm link so as to control the angle between the forearm axis and the wrist axis.

16. ~~41.~~ (Amended) The endoscopic surgical instrument **[surgical manipulator]** as described in claim ~~40~~ 15 wherein the wrist link comprises an inner link and an outer link and wherein the control section further comprises means for moving the outer link of the wrist link relative to the inner link of the wrist link.

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17 ~~42.~~ (Amended) The endoscopic surgical instrument **[surgical manipulator]** as described in claim ~~41~~ 16 wherein the outer link of the wrist link and the inner link of the wrist link are axially aligned and wherein the control section further comprises means for rotating the outer link relative to the inner link.

18. ~~43.~~ (Amended) The endoscopic surgical instrument **[surgical manipulator]** as described in claim ~~40~~ 15 wherein the end effector comprises a first element and a second element and wherein the control section further comprises means for moving the first element relative to the second element.

19. ~~44.~~ (Amended) The endoscopic surgical instrument **[surgical manipulator]** as described in claim ~~41~~ 16 wherein the end effector comprises a first element and a second element and wherein the control section further comprises means for moving the first element relative to the second element.

20. ~~45.~~ (Amended) The endoscopic surgical instrument **[surgical manipulator]** as described in claim ~~42~~ 17 wherein the end

effector comprising a surgical instrument head selected from the group of retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades and irrigators.

~~46.~~ 21. (Amended) The endoscopic surgical instrument **[surgical manipulator]** as described in claim ~~42~~ 17 wherein the control section further comprises means for mounting the control section on a support rail of a surgical table for supporting the endoscopic surgical instrument **[surgical manipulator]** during a surgical procedure.

Please add claims 47-57 as follows:

-- ~~47.~~ 22. A minimally invasive surgery system comprising:

a surgical station including a manipulator linkage supporting an actuatable end effector, the manipulator including an elongate rigid member having a proximal end and a distal end, wherein a joint is disposed between the distal end of the member and the end effector;

a control station including an actuatable handle and a movable controller; and

a servomechanism coupling the handle to the end effector so that actuation of the handle effects actuation of the end effector to manipulate tissue at an internal surgical site within a patient body, wherein the servomechanism moves the end effector within the internal surgical site in response to movement of the controller by pivoting the member about an insertion point between the proximal and distal ends of the member, wherein such pivotal movement of the member avoids lateral movement of the member at the insertion point, and by articulating the joint distally of the insertion point and within the patient body.

~~48.~~ 23. The minimally invasive surgery system of claim ~~47~~ 22, wherein the member comprises a rigid forearm link defining a forearm axis extending longitudinally from the proximal end of

the forearm to the distal end of the forearm, and further comprising:

a wrist link pivotally connected to the distal end of the forearm so as to pivot about a first axis which is generally perpendicular to the longitudinal forearm axis of the forearm link;

wherein the end effector comprises an end effector member coupled to the wrist link by the joint so as to move about a second axis which is generally perpendicular to the first axis.

24. 23
~~49.~~ The minimally invasive surgery system of Claim ~~48~~, wherein said end effector includes a pair of jaw elements pivotally coupled to the wrist link.

25. 22
~~50.~~ The minimally invasive surgery system of claim ~~47~~, wherein the servomechanism drives the proximal end of the member laterally relative to an axis of the member in first and second degrees of freedom, and wherein the servomechanism drives the proximal end of the member axially relative to the axis in a third degree of freedom in response to movement of the controller.

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~~51.~~ The minimally invasive surgery system of claim ~~50~~, wherein the servomechanism pivots the end effector so as to orient the end effector within the patient body with a plurality of degrees of freedom relative to the member.

27. 22
~~52.~~ The minimally invasive surgery system of claim ~~47~~, wherein the control ~~controller~~ station includes a station housing, wherein the controller comprises a linkage coupling the handle to the station housing, wherein the servomechanism repositions the end effector in the internal surgical site in response to repositioning of the handle in a station workspace, and wherein the servomechanism reorients the end effector in the internal surgical site in response to reorientation of the handle in the station workspace.

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28. 27
53. The minimally invasive surgery system of claim 52, wherein the surgical station includes an endoscope oriented toward the end effector, wherein the control station includes a display coupled to the endoscope so as to produce an image of the end effector, and wherein the display is oriented relative to the handle and the servomechanism is programmed so that the image of the endoscope as viewed by an operator and the handle as held by a hand of the operator appear to the operator to define an integral body during positional and orientational movements of the handle and the end effector.

29. 22
54. The minimally invasive surgery system of claim 47, wherein the end effector comprises a surgical instrument head selected from the group consisting of retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades, and irrigators.

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55. A minimally invasive surgery system comprising:

a surgical station including a manipulator linkage supporting an end effector so that the end effector can move in three dimensions, the manipulator including an elongate rigid member having a proximal end and a distal end, the proximal end of the member movable in a plurality of proximal degrees of freedom, wherein a joint is disposed between the distal end of the member and the end effector, the joint providing a plurality of distal degrees of freedom;

D and a movable controller
a control station including an actuatable handle, the actuatable handle movable in a three dimensional station workspace; and

a servomechanism coupling the handle to the end effector so that actuation of the handle effects actuation of the end effector, the servomechanism coupled to the manipulator so that movement of the controller in the three dimensional space effects movement of the end effector in the surgical site by driving the proximal end in the proximal degrees of freedom, by pivoting the member about an insertion point between the proximal end and the distal end, wherein such pivotal movement of the

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member avoids lateral movement of the member at the insertion point, and by articulating the joint about the distal degrees of freedom.

31. ~~56.~~ A minimally invasive surgery method comprising:

inserting a surgical end effector into an internal surgical site of a patient body through a percutaneous penetration, the end effector attached to a rigid member by a joint;

actuating the end effector to manipulate tissue in response to actuation of a handle of a control station;

moving the end effector at the surgical site with a servomechanism in response to movement of the handle by driving a proximal end of the member outside the patient body with the servomechanism and by articulating the joint inside the patient body with the servomechanism, wherein the member pivots about the percutaneous penetration between the proximal end of the member and a distal end of the member when the end effector is moved by the servomechanism so as to avoid lateral movement of the member relative to the percutaneous penetration.

32. ~~57.~~ The minimally invasive surgery method of claim ~~56~~ 31, wherein the member comprises a rigid forearm, wherein a wrist member is pivotally connected to the forearm member by the joint so as to pivot about a first axis, and wherein the end effector comprises a plurality of end effector elements movably coupled to the wrist member so as to move about a second axis that is generally perpendicular to the first axis;

wherein the moving step is performed by manually pivoting a wrist-pivoting element of a control assembly to cause the wrist member to pivot correspondingly about the distal forearm end and along the first axis; and

wherein the end effector actuation step is performed by manually actuating the handle to cause the end effector elements to move about the second axis.